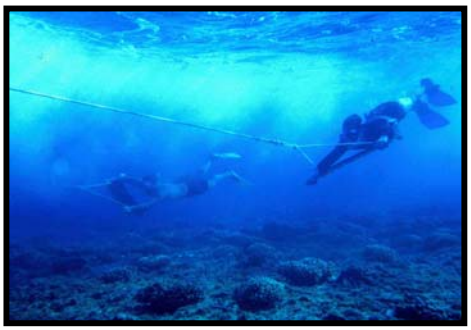
NOAA Fisheries

Coral Reef Conservation Program

2002 Pacific Highlight

NOAA Fisheries

Marine Debris Removal From the Northwestern Hawaiian Islands



Line transect survey

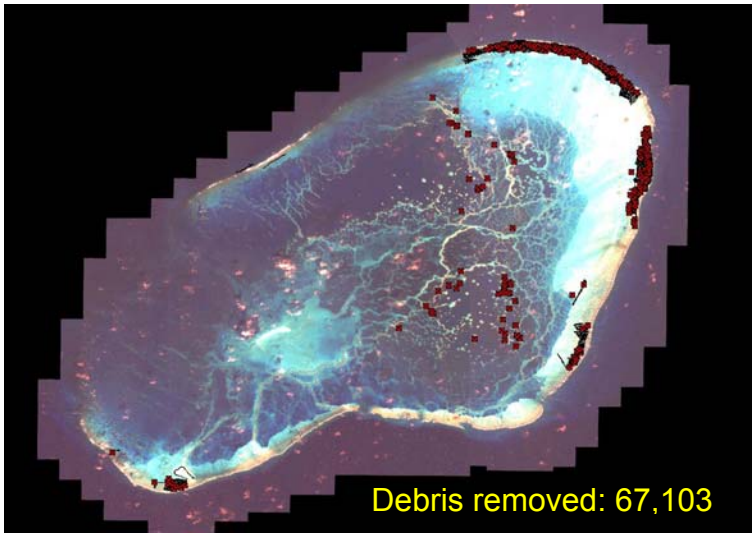
Lifting debris into boat

Removal of derelict fishing gear from coral

A hard day's work

Marine debris, mostly derelict fishing gear from distant water fisheries, is the most serious human impact on the coral reef ecosystem of the Northwestern Hawaiian Islands (NWHI). Beginning in April 2002 NOAA Fisheries (National Marine Fisheries Service - NMFS) led the second year of a large-scale interagency partnership to remove existing concentrations of derelict fishing in the NWHI. NOAA's Coral Reef Ecosystem Investigation at NOAA Fisheries Honolulu Laboratory is collaborating with the National Ocean Service, NWHI Coral Reef Ecological Reserve, State of Hawaii, City and County of Honolulu, U.S. Fish and Wildlife Service, U.S. Coast Guard, U.S. Navy, the University of Hawaii, University of Alaska, NOAA's Sea Grant Program, and other local agencies, businesses and NGO partners.

Pearl & Hermes Atoll 2001



★ Debris Items

Two vessels were chartered to support three rotating teams of marine debris divers for 5 ½ months. Twenty-four NOAA divers were trained in the specialized skills necessary to remove debris while minimizing added anthropogenic effects to the reefs. Unlike the previous year's removal effort, which focused mainly on reefs at Pearl and Hermes and Kure Atolls, FY2002 removal efforts took place throughout the NWHI. At the end of this year's effort, divers had removed 107 metric tons (214,000 lbs) of debris bringing the total debris removed by this multi-year project over 239 tons (479,724 lbs) since its inception in 1996.

To locate the marine debris, divers conduct line transect surveys, while recording GPS coordinates of the transect and located debris. After identifying the locating where the debris is entangled on the reef structure, divers carefully cut each strand of the attached gear from the coral to insure that additional damage is not inflicted to the reef. Airbags are deployed to lift the balls of debris to the surface, where it is lifted on to the small boats and brought to the large ships.

Unloading debris on to the *American Islander*

This debris removal work has revealed that derelict fishing gear causes extensive damage not only to the coral reefs themselves, but also to the animals that utilize these habitats. NMFS marine debris divers opportunistically disentangle wildlife. This year, divers found seven monk seals (six released alive, one dead) and three green sea turtles (two released alive, one dead) in the derelict gear. However, total entanglements are likely higher, given that many entangled animals die at sea and are scavenged by other organisms.

Marine debris diver rescuing a threatened green sea turtle trapped in derelict fishing gear caught on coral:



To understand where the debris is more likely to accumulate in the NWHI, NMFS is using GPS coordinates of geographic locations where derelict gear has been removed and has developed debris accumulation study sites to determine the rates of gear accumulation on Kure Atoll, Pearl & Hermes Atoll, and Lisisanski Island. FY2000-2001 research confirmed that areas of greatest debris density at Kure Atoll, Pearl & Hermes Atoll, and Lisisanski Island coincided with areas preferentially used by Hawaiian monk seals as birthing and nursery grounds.


Collecting samples of the derelict gear

NMFS researchers are also identifying the source of gear by sampling the debris to determine the types of derelict gear. Some types of nets identified from debris removed from the reefs and beaches of NHWI include monofilament gillnet, seine net, knotless trawl net, and knotted trawl net. Trawl netting is the most frequent derelict fishing gear encountered, which has originated from trawl fisheries operating around the continental shelves of the Pacific Rim (thousand of kilometers from the NHWI).

This is an element of the NOAA Coral Reef Conservation Program.

For More Information:

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